



# Cisco IOS Switching Services Commands

This chapter presents the Cisco IOS switching services commands.

Some commands found in previous releases of this book have been replaced. Older commands generally continue to provide the same functionality in the current release, but are no longer documented. Support for the older version of these commands may already be removed on your system, or may be removed in a future Cisco IOS software release.

Table 1 maps the old commands to their replacements.

**Table 1** Cisco IOS Switching Services Old Commands and Replacement Commands

Old Command	Replacement Command
<code>tag-switching atm cos</code>	<code>mpls atm cos</code>
<code>tag-switching atm disable-headwnd vc</code>	<code>mpls atm disable-headend-vc</code>
<code>tag-switching atm multi-vc</code>	<code>mpls atm multi-vc</code>
<code>tag-switching atm vpi</code>	<code>mpls atm vpi</code>
<code>tag-switching atm vp-tunnel</code>	<code>mpls atm vp-tunnel</code>
<code>tag-switching cos-map</code>	<code>mpls cos-map</code>
<code>tag-switching advertise-tags</code>	<code>mpls ldp advertise-labels</code>
<code>tag-switching atm allocation-mode</code>	<code>mpls ldp atm control-mode</code>
<code>tag-switching atm vc-merge</code>	<code>mpls ldp atm vc-merge</code>
<code>tag-switching tdp discovery</code>	<code>mpls ldp discovery</code>
<code>tag-switching tdp holdtime</code>	<code>mpls ldp holdtime</code>
<code>tag-switching atm maxhops</code>	<code>mpls ldp maxhops</code>
<code>tag-switching prefix-map</code>	<code>mpls prefix-map</code>
<code>tag-switching request-tags for</code>	<code>mpls request-labels for</code>
<code>show tag-switching atm-tdp bindings</code>	<code>show mpls atm-ldp bindings</code>
<code>show tag-switching atm-tdp bindwait</code>	<code>show mpls atm-ldp bindwait</code>
<code>show tag-switching atm-tdp summary</code>	<code>show mpls atm-ldp bindings</code>

*Table 1 Cisco IOS Switching Services Old Commands and Replacement Commands (continued)*

Old Command	Replacement Command
<b>show tag-switching cos-map</b>	<b>show mpls cos-map</b>
<b>show tag-switching tdp bindings</b>	<b>show mpls ldp bindings</b>
<b>show tag-switching tdp discovery</b>	<b>show mpls ldp discovery</b>
<b>show tag-switching tdp neighbors</b>	<b>show mpls ldp neighbor</b>
<b>show tag-switching tdp parameters</b>	<b>show mpls ldp parameters</b>
<b>show tag-switching prefix-map</b>	<b>show mpls prefix-map</b>

# address-family

To enter the address family submode for configuring routing protocols such as Border Gateway Protocol (BGP), Routing Information Protocol (RIP), and static routing, use the **address-family** command in address family configuration submode. To disable the address family submode for configuring routing protocols, use the **no** form of this command.

## VPN-IPv4 Unicast

**address-family vpnv4 [unicast]**

**no address-family vpnv4 [unicast]**

## IPv4 Unicast

**address-family ipv4 [unicast]**

**no address-family ipv4 [unicast]**

## IPv4 Unicast with CE router

**address-family ipv4 [unicast] vrf vrf-name**

**no address-family ipv4 [unicast] vrf vrf-name**

Syntax Description		
<b>vpnv4</b>		Configures sessions that carry customer Virtual Private Network (VPN)-IPv4 prefixes, each of which has been made globally unique by adding an 8-byte route distinguisher.
<b>ipv4</b>		Configures sessions that carry standard IPv4 address prefixes.
<b>unicast</b>		(Optional) Specifies unicast prefixes.
<b>vrf vrf-name</b>		Specifies the name of a VPN routing/forwarding instance (VRF) to associate with submode commands.

## Defaults

Routing information for address family IPv4 is advertised by default when you configure a BGP session using the **neighbor remote-as** command unless you execute the **no bgp default ipv4-activate** command.

## Command Modes

Address family configuration

## Command History

Release	Modification
12.0(5)T	This command was introduced.

**Usage Guidelines**

Using the **address-family** command puts the router in address family configuration submode (prompt: `(config-router-af)#`). Within this submode, you can configure address-family specific parameters for routing protocols, such as BGP, that can accommodate multiple Layer 3 address families.

To leave address family configuration submode and return to router configuration mode, enter the **exit-address-family** or **exit** command.

**Examples**

The **address-family** command in the following example puts the router into address family configuration submode for the VPNv4 address family. Within the submode, you can configure advertisement of Network Layer Reachability Information (NLRI) for the VPNv4 address family using **neighbor activate** and other related commands:

```
router bgp 100
address-family vpnv4
```

The **address-family** command in the following example puts the router into address family configuration submode for the IPv4 address family. Use this form of the command, which specifies a VRF, only to configure routing exchanges between provider edge (PE) and customer edge (CE) devices. This **address-family** command causes subsequent commands entered in the submode to be executed in the context of VRF vrf2. Within the submode, you can use **neighbor activate** and other related commands to accomplish the following:

- Configure advertisement of IPv4 NLRI between the PE and CE routers.
- Configure translation of the IPv4 NLRI (that is, translate IPv4 into VPNv4 for NLRI received from the CE, and translate VPNv4 into IPv4 for NLRI to be sent from the PE to the CE).
- Enter the routing parameters that apply to this VRF.

The following example shows how to enter the address family submode:

```
Router(config)# router bgp 100
Router(config-router)# address-family ipv4 unicast vrf vrf2
```

**Related Commands**

Command	Description
<b>default</b>	Exits from address family submode.
<b>neighbor activate</b>	Enables the exchange of information with a neighboring router.

# append-after

To insert a path entry after a specified index number, use the **append-after** command in IP explicit path configuration mode.

## **append-after** *index command*

Syntax Description	<i>index</i>	Previous index number. Valid values are from 0 to 65534.
	<i>command</i>	An IP explicit path configuration command that creates a path entry. (Use the <b>next-address</b> command to specify the next IP address in the explicit path.)

**Defaults** No path entry is inserted after a specified index number.

**Command Modes** IP explicit path configuration

Command History	Release	Modification
	12.0(5)S	This command was introduced.

**Examples** In the following example, the **next-address** command is inserted after index 5:

```
Router(config-ip-expl-path)# append-after 5 next-address 3.3.27.3
```

Related Commands	Command	Description
	<b>index</b>	Inserts or modifies a path entry at a specific index.
	<b>interface fastethernet</b>	Enters the command mode for IP explicit paths and creates or modifies the specified path.
	<b>list</b>	Displays all or part of the explicit paths.
	<b>next-address</b>	Specifies the next IP address in the explicit path.
	<b>show ip explicit-paths</b>	Displays the configured IP explicit paths.

# atm-address

To override the control ATM address of a Multiprotocol over ATM client (MPC) or a Multiprotocol over ATM server (MPS), use the **atm-address** command in interface configuration mode. To revert to the default address, use the **no** form of this command.

**atm-address** *atm-address*

**no atm-address**

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<b>Syntax Description</b>	<i>atm-address</i> Control ATM address.
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<b>Defaults</b>	The default is an automatically generated ATM address.
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<b>Command Modes</b>	Interface configuration
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<b>Command History</b>	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>11.3(3a)WA4(5)</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	11.3(3a)WA4(5)	This command was introduced.
Release	Modification				
11.3(3a)WA4(5)	This command was introduced.				

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<b>Usage Guidelines</b>	<p>This command specifies the control ATM address that an MPC or MPS should use when it comes up, if it is associated with a hardware interface.</p>
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The **atm-address** command overrides the default operational control address of the MPC or MPS. When this address is deleted (using the **no** form of the command), the MPC or MPS uses an automatically generated address as its control address.

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<b>Examples</b>	<p>The following example shows how to specify the ATM address for an MPC:</p> <pre>Router(config-if)# atm-address 47.009181000000061705b7701.00400BFF0011.00</pre>
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The following example shows how to specify the ATM address for an MPS:

```
Router(config-if)# atm-address 47.009181000000061705C2B01.00E034553024.00
```

# bgp default route-target filter

To enable automatic Border Gateway Protocol (BGP) route-target community filtering, use the **bgp default route-target filter** command in router configuration mode. To disable automatic BGP route-target community filtering, use the **no** form of this command.

**bgp default route-target filter**

**no bgp default route-target filter**

## Syntax Description

This command has no arguments or keywords.

## Defaults

This command is enabled by default.

## Command Modes

Router configuration

## Command History

Release	Modification
12.1(5)T	This command was introduced.

## Usage Guidelines

Use the **bgp default route-target filter** command to control the distribution of Virtual Private Network (VPN) routing information through the list of VPN route-target communities.

When you use the **no** form of this command, all received VPN-IPv4 routes are accepted by the configured router. Accepting VPN-IPv4 routes is the desired behavior for a router configured as an autonomous system border edge router or as a customer edge (CE) BGP border edge router.

If you configure the router for BGP route-target community filtering, all received exterior BGP (EBGP) VPN-IPv4 routes are discarded when those routes do not contain a route-target community value that matches the import list of any configured VPN routing/forwarding instances (VRFs). This is the desired behavior for a router configured as a provider edge (PE) router.



### Note

This command is automatically disabled if a PE router is configured as a client of a common VPN-IPv4 route reflector in the autonomous system.

## Examples

In the following example, BGP route-target filtering is disabled for autonomous system 120:

```
Router(config)# router bgp 120
Router(config-router)# no bgp default route-target filter
```

## Related Commands

Command	Description
<b>show tag-switching forwarding-table</b>	Displays the contents of the LFIB.

# bgp scan-time

To configure scanning intervals of BGP routers for next hop validation or to decrease import processing time of Virtual Private Network version 4 (VPNv4) routing information, use the **bgp scan-time** command in address family or router configuration mode. To return the scanning interval of a router to its default scanning interval of 15 seconds, use the **no** form of this command.

**bgp scan-time** [**import**] *scanner-interval*

**no bgp scan-time** [**import**] *scanner-interval*

Syntax Description	import	(Optional) Configures import processing of VPNv4 unicast routing information from BGP routers into routing tables.
	<i>scanner-interval</i>	Specifies the scanning interval of BGP routing information. Valid values used for selecting the desired scanning interval are from 5 to 60 seconds. The default is 15 seconds.

**Defaults** The default scanning interval is 15 seconds.

**Command Modes** Address family configuration  
Router configuration

Command History	Release	Modification
	12.07(T)	This command was introduced.

**Usage Guidelines** The **import** keyword is supported in address family VPNv4 unicast mode only. Entering the **no** form of this command does not disable scanning, but removes it from the output of the **show running-config** command.

**Examples** In the following router configuration example, the scanning interval for next hop validation of IPv4 unicast routes for BGP routing tables is set to 20 seconds:

```
router bgp 100
no synchronization
bgp scan-time 20
```

In the following address family configuration example, the scanning interval for next hop validation of address family VPNv4 unicast routes for BGP routing tables is set to 45 seconds:

```
router bgp 150
address-family vpn4 unicast
bgp scan-time 45
```

In the following address family configuration example, the scanning interval for importing address family VPNv4 routes into IP routing tables is set to 30 seconds:

```
router bgp 150
 address-family vpnv4 unicast
  bgp scan-time import 30
```

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**Related Commands**

Command	Description
<b>address-family vpnv4</b>	Places the router in address family configuration mode for configuring routing sessions such as BGP, RIP, or static routing sessions that use standard VPNv4 address prefixes.

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# cable bundle

To configure a cable interface to belong to an interface bundle, use the **cable bundle** command in interface configuration mode. To delete a cable interface bundle definition, use the **no** form of this command.

**cable bundle** *number* [**master**]

**no cable bundle** *number* [**master**]

Syntax Description		
	<i>number</i>	Specifies the bundle identifier. Valid range is from 1 to 255.
	<b>master</b>	(Optional) Defines the specified interface as the master.

**Defaults** No cable interface bundle is defined.

**Command Modes** Interface configuration

Command History	Release	Modification
	12.0(7)XR	This command was introduced.

**Usage Guidelines**

You can configure up to four interface bundles. In each bundle, specify one interface as the master interface by using the optional **master** keyword.

Configure only an IP address on the master interface. If an IP address is configured and the interface is not specified as the master interface, any attempt to add an interface to a bundle is rejected.

Specify all generic IP networking information (such as IP address, routing protocols, and switching modes) on the bundle master interface. Do not specify generic IP networking information on bundle slave interfaces.

If you attempt to add an interface to a bundle as nonmaster interface and an IP address is assigned to this interface, the command will fail. You must remove the IP address configuration before you can add the interface to a bundle.

If you have configured an IP address on a bundled interface and the interface is not the master interface, a warning message appears.

Specify generic (not downstream or upstream related) cable interface configurations, such as source-verify or Address Resolution Protocol (ARP) handling, on the master interface. Do not specify generic configuration on nonmaster interfaces.

If you configure an interface as a part of a bundle and it is not the master interface, all generic cable configuration for this interface is removed. The master interface configuration will then apply to all interfaces in the bundle.

If you shut down or remove the master interface in a bundle, no data packets are sent to any of the interfaces in this bundle. Packets are still physically received from nonmaster interfaces that have not been shut down, but those packets will be discarded. Modems connected to those interfaces will not be disconnected immediately, but modems going online will not be able to obtain an IP address, download their configuration file, or renew their IP address assignment if the Dynamic Host Configuration Protocol (DHCP) lease expires.

If you shut down a slave interface, only this shut down interface is affected.

### Examples

The following example shows how to configure interface 25 to be the master interface:

```
Router(config-if)# cable bundle 25 master
```

```
Router(config-if)#
```

```
07:28:17: %UBR7200-5-UPDOWN: Interface Cable3/0 Port U0, changed state to down
```

```
07:28:18: %UBR7200-5-UPDOWN: Interface Cable3/0 Port U0, changed state to up
```

The following example shows the error message that appears if you try to configure an interface with an IP address that is not the master interface:

```
Router(config-if)# cable bundle 5
```

```
Please remove ip address config first then reenter this command
```

### Related Commands

Command	Description
<b>show cable bundle</b>	Displays the forwarding table for the specified interface bundle.

# cable helper-address

To specify a destination address for User Datagram Protocol (UDP) broadcast Dynamic Host Configuration Protocol (DHCP) packets, use the **cable helper-address** command in interface configuration mode. To remove the specified destination address for UDP DHCP packets, use the **no** form of this command.

**cable helper-address** *ip-address* { **cable-modem** | **host** }

**no cable helper-address** *ip-address* { **cable-modem** | **host** }

Syntax Description	<i>ip-address</i>	The IP address of a DHCP server.  Based on whether you add the <b>host</b> or <b>cable-modem</b> keyword at the end of the <b>cable helper-address</b> command, it is the IP address of the multiple service operators (MSOs) Cisco Network Registrar (CNR) server or the Internet service providers (ISPs) DHCP server.
	<b>cable-modem</b>	Specifies that only cable modem UDP broadcasts are forwarded
	<b>host</b>	Specifies that only host UDP broadcasts are forwarded.

**Defaults** This command is disabled by default.

**Command Modes** Interface configuration

Command History	Release	Modification
	11.3 NA	This command was introduced.

**Usage Guidelines** If you specify a secondary interface address, the giaddr field in the DHCP requests will be sent to the primary address for DHCP requests received from cable modems, and to the secondary IP address for DHCP requests received from hosts.

**Examples** The following example shows how to forward UDP broadcasts from cable modems to the DHCP server at 172.23.66.44:

```
Router(config-if)# cable helper-address 172.23.66.44 cable-modem
```

The following example shows how to forward UDP broadcasts from hosts to the DHCP server at 172.23.66.44:

```
Router(config-if)# cable helper-address 172.23.66.44 host
```

# cache

To configure aggregation cache operational parameters, use the **cache** command in aggregation cache configuration mode. To disable the operational parameters, use the **no** form of this command.

```
cache {entries number / timeout [active minutes / inactive seconds]}
```

```
no cache {entries / timeout {active / inactive}}
```

Syntax Description	
<b>entries</b> <i>number</i>	The number of cached entries allowed in the aggregation cache. The range is from 1024 to 524288. The default is 4096.
<b>timeout</b>	Dissolves the session in the aggregation cache.
<b>active</b> <i>minutes</i>	(Optional) The number of minutes that an active entry is active. The range is from 1 to 60 minutes. The default is 30 minutes.
<b>inactive</b> <i>seconds</i>	(Optional) The number of seconds that an inactive entry will stay in the aggregation cache before it times out. The range is from 10 to 600 seconds. The default is 15 seconds.

## Defaults

The default for cache entries is 4096.

The default for active cache entries is 30 minutes.

The default for inactive cache entries is 15 seconds.

## Command Modes

Aggregation cache configuration

## Command History

Release	Modification
12.0(3)T	This command was introduced.

## Examples

The following example shows how to set the aggregation cache entry limits:

```
cache entries 2046
cache timeout inactive 199
```

## Related Commands

Command	Description
<b>default-name</b>	Enables an aggregation cache.
<b>ip cache-invalidate-delay</b>	Enables the exporting of information from NetFlow aggregation caches.
<b>ip flow-aggregation cache</b>	Enables aggregation cache configuration mode.
<b>show ip cache flow aggregation</b>	Displays the aggregation cache configuration.
<b>show mpoa client</b>	Displays the statistics for the data export, including the main cache and all other enabled caches.

## class (MPLS)

To configure a defined Multiprotocol Label Switching (MPLS) class of service (CoS) map that specifies how classes map to label switched controlled virtual circuits (LVCs) when combined with a prefix map, use the **class** command in CoS map submode. To remove the defined MPLS CoS map, use the **no** form of this command.

```
class class [available | standard | premium | control]
```

```
no class class [available | standard | premium | control]
```

Syntax Description		
	<i>class</i>	The precedence of identified traffic to classify traffic.
	<b>available</b>	(Optional) Means low precedence (In/Out plus lower two bits = 0,4).
	<b>standard</b>	(Optional) Means next precedence (In/Out plus lower two bits = 1,5).
	<b>premium</b>	(Optional) Means high precedence (In/Out plus lower two bits = 2,6).
	<b>control</b>	(Optional) Means highest precedence pair (In/Out plus lower two bits = 3,7). These bits are reserved for control traffic.

**Defaults** This command is disabled by default.

**Command Modes** CoS map submode

Command History	Release	Modification
	12.0(5)T	This command was introduced.

**Examples** The following example shows how to configure a CoS map:

```
Router(config)# mpls cos-map 55
Router(config-mpls-cos-map)# class 1 premium
Router(config-mpls-cos-map)# exit
```

Related Commands	Command	Description
	<b>access-list</b>	Configures the access list mechanism for filtering frames by protocol type or vendor code.
	<b>mpls cos-map</b>	Creates a class map that specifies how classes map to LVCs when combined with a prefix map.
	<b>mpls prefix-map</b>	Configures a router to use a specified quality of service (QoS) map when a label definition prefix matches the specified access list.
	<b>show mpls cos-map</b>	Displays the CoS map used to assign quantity of LVCs and associated CoS of those LVCs.

# clear adjacency

To clear the Cisco Express Forwarding (CEF) adjacency table, use the **clear adjacency** command in privileged EXEC mode.

## clear adjacency

**Syntax Description** This command has no arguments or keywords.

**Command Modes** Privileged EXEC

Command History	Release	Modification
	11.2 GS	This command was introduced to support the Cisco 12012 Internet router.
	11.1 CC	Multiple platform support was added.

**Usage Guidelines** When you issue this command, entries in the adjacency table that reside on the Route Processor (RP) are removed and then adjacency sources (such as ARP and Frame Relay) are requested to repopulate the adjacency tables once again. Layer 2 next hop information is reevaluated.

With distributed CEF (dCEF) mode, the adjacency tables that reside on line cards are always synchronized to the adjacency table that resides on the RP. Therefore, clearing the adjacency table on the RP using the **clear adjacency** command also clears the adjacency tables on the line cards; all changes are propagated to the line cards.

Clearing adjacencies causes the adjacency table to repopulate from the Layer 2 to Layer 3 mapping tables, such as Address Resolution Protocol (ARP). To cause the mappings to be re-evaluated, the source information must be cleared by using a Cisco IOS command, such as the **clear arp-cache** command.

**Examples** The following example shows how to clear the adjacency table:

```
Router# clear adjacency
```

Related Commands	Command	Description
	<b>clear arp-cache</b>	Deletes all dynamic entries from the ARP cache.
	<b>show adjacency</b>	Displays CEF adjacency table information.

# clear adjacency epoch

To begin a new epoch and increment the epoch number of the adjacency table, use the **clear adjacency epoch** command in privileged EXEC mode.

## clear adjacency epoch

**Syntax Description** This command has no arguments or keywords.

**Command Modes** Privileged EXEC

Command History	Release	Modification
	12.2(8)T	This command was introduced.

**Usage Guidelines** The **clear adjacency epoch** command increments the epoch and flushes entries with the old epoch. This command clears inconsistencies.

Use the **clear adjacency epoch** command when you want to rebuild the adjacency table. A new adjacency table might be required because the user wants to remove inconsistencies from the table.

**Examples** The following example shows how to begin a new epoch and increments the epoch number of the adjacency table:

```
Router# clear adjacency epoch
```

Related Commands	Command	Description
	<b>clear ip cef epoch</b>	Begins a new epoch and increments the epoch number for a CEF table.

# clear atm vc

To release a specified switched virtual circuit (SVC), use the **clear atm vc** command in privileged EXEC mode.

**clear atm vc** *vcd*

<b>Syntax Description</b>	<i>vcd</i> Virtual channel descriptor of the channel to be released.
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<b>Command Modes</b>	Privileged EXEC
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<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	11.0	This command was introduced.

**Usage Guidelines**

For multicast or control virtual channel connections (VCCs), this command causes the LAN emulation (LANE) client to exit and rejoin an emulated LAN.

For data VCCs, this command also removes the associated LAN Emulation Address Resolution Protocol (LE ARP) table entries.

**Examples**

The following example shows how to release SVC 1024:

```
Router# clear atm vc 1024
```

# clear ip cache

To delete entries in the routing table cache used to fast switch IP traffic, use the **clear ip cache** command in the privileged EXEC mode.

**clear ip cache** [*prefix mask*]

<b>Syntax Description</b>	<i>prefix mask</i>	(Optional) Deletes only the entries in the cache that match the prefix and mask combination.
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<b>Command Modes</b>	Privileged EXEC
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<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	10.0	This command was introduced.

**Usage Guidelines** Use this command to clear routes from the routing table cache. You can remove all entries in the routing cache or you can remove only those entries associated with a specified prefix and mask.

**Examples** The following command shows how to delete entire in the routing table cache:

```
Router# clear ip cache
```

The following command show how to delete entries in the router table associated with the prefix and mask 192.168.32.0 255.255.255.0:

```
Router# clear ip cache 192.168.32.0 255.255.255.0
```

<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	<b>clear ip cache</b>	Controls the use of high-speed switching caches for IP routing.
	<b>show ip cache</b>	Displays the routing table cache used to fast switch IP traffic.

# clear ip cef epoch

To begin a new epoch and increment the epoch number for one or all Cisco Express Forwarding (CEF) tables, use the **clear ip cef epoch** command in privileged EXEC mode.

```
clear ip cef epoch [all-vrfs | full | vrf table]
```

Syntax Description		
<b>all-vrfs</b>	(Optional)	Begins a new epoch for all Forwarding Information Base (FIB) tables.
<b>full</b>	(Optional)	Begins a new epoch for all tables, including adjacency tables.
<b>vrf</b>	(Optional)	Begins a new epoch for the specified FIB table.
<i>table</i>	(Optional)	Virtual Private Network (VPN) routing/forwarding instance (VRF) name.

Command Modes	
	Privileged EXEC

Command History	Release	Modification
	12.2(8)T	This command was introduced.

**Usage Guidelines** Use the **clear ip cef epoch** command when you want to rebuild a table. This command increments the epoch and flushes entries with the old epoch. This command clears any inconsistencies that might exist, so if everything in the system is working correctly, this command does not affect the CEF forwarding tables other than changing the current epoch values.

**Examples** The following example shows the output before and after you clear the epoch table and increment the epoch number:

```
Router# show ip cef epoch

CEF epoch information:

Table: Default-table
    Table epoch: 2 (43 entries at this epoch)

Adjacency table
    Table epoch: 2 (5 entries at this epoch)

Router# clear ip cef epoch full

Router# show ip cef epoch

CEF epoch information:

Table: Default-table
    Table epoch: 3 (43 entries at this epoch)

Adjacency table
    Table epoch: 3 (5 entries at this epoch)
```

■ clear ip cef epoch

---

**Related Commands**

Command	Description
<b>show cef state</b>	Displays the state of CEF.
<b>show ip cef epoch</b>	Shows the table epochs of the adjacency table and of all FIB tables.

# clear cef interface

To clear the Cisco Express Forwarding (CEF) per-interface traffic policy statistics for an interface, use the **clear cef interface policy-statistics** command in privileged EXEC mode.

**clear cef interface** [*interface-type interface-number*] **policy-statistics**

Syntax Description		
	<i>interface-type</i>	Type of interface to clear the policy statistics for
	<i>interface-number</i>	Port, connector, or interface card number

**Defaults** If you do not specify an interface type and interface number the policy statistics for all interfaces are cleared.

**Command Modes** Privileged EXEC

Command History	Release	Modification
	12.0(9)S	This command was introduced to support the Cisco 12000 series Internet routers.
	12.0(17)ST	This command was introduced to support the Cisco 12000 series Internet routers.
	12.2(13)T	This command was integrated into Cisco IOS Release 12.2(13)T.

**Usage Guidelines** This command clears the CEF BGP traffic policy statistics counters for an interface.

**Examples** The following example clears the CEF BGP traffic policy statistics counters:

```
R1# clear cef interface ethernet 0/0 policy-statistics
R1#
```

Related Commands	Command	Description
	<b>bgp-policy</b>	Enables Border Gateway Protocol (BGP) policy accounting or policy propagation on an interface.
	<b>show cef interface policy-statistics</b>	Displays detailed Cisco Express Forwarding (CEF) policy statistical information for all interfaces.

# clear cef linecard

To clear Cisco Express Forwarding (CEF) information from line cards, use the **clear cef linecard** command in user EXEC or privileged EXEC mode.

**clear cef linecard** [*slot-number*] [**adjacency** | **interface** | **prefix**]

Syntax Description		
	<i>slot-number</i>	(Optional) Line card slot number to clear. When you omit this argument, all line card slots are cleared.
	<b>adjacency</b>	(Optional) Clears line card adjacency tables and rebuilds adjacency for the specified line card.
	<b>interface</b>	(Optional) Clears line card interface information and recreates the interface information for the specified line card.
	<b>prefix</b>	(Optional) Clears line card prefix tables and starts rebuilding the forwarding information base (FIB) table.

Command Modes	
	User EXEC Privileged EXEC

Command History	Release	Modification
	11.2 GS	This command was introduced to support the Cisco 12012 Internet router.
	11.1 CC	Multiple platform support was added.

Usage Guidelines	
	This command is available only on distributed switching platforms running distributed CEF (dCEF). CEF information on the line cards is cleared, however, CEF information on the Route Processor (RP) is not affected.
	Once you clear CEF information from line cards, the corresponding information from the RP is propagated to the line cards. Interprocess communications (IPC) ensures that CEF information on the RP matches the CEF information on the line cards.

Examples	
	The following example shows how to clear the CEF information from the line cards:

```
Router# clear cef linecard
```

Related Commands	Command	Description
	<a href="#">show cef linecard</a>	Displays CEF-related interface information by line card.

# clear ip cef event-log

To clear the Cisco Express Forwarding (CEF) event-log buffer, use the **clear ip cef event-log** command in user EXEC or privileged EXEC mode.

## clear ip cef event-log

**Syntax Description** This command has no arguments or keywords.

**Command Modes** User EXEC  
Privileged EXEC

Command History	Release	Modification
	12.0(15)S	This command was introduced.
	12.2(2)T	This command was integrated into Cisco IOS Release 12.2(2)T.

**Usage Guidelines** This command clears the entire CEF table event log that holds forwarding information base (FIB) and adjacency events.

**Examples** The following example shows how to clear the CEF event-log buffer:

```
Router# clear ip cef event-log
```

Related Commands	Command	Description
	<a href="#">ip cef table consistency-check</a>	Enables CEF table consistency checker types and parameters.
	<a href="#">ip cef table event-log</a>	Controls CEF table event-log characteristics.
	<a href="#">show ip cef events</a>	Displays all recorded CEF FIB and adjacency events.

# clear ip cef inconsistency

To clear the Cisco Express Forwarding (CEF) inconsistency statistics and records found by the CEF consistency checkers, use the **clear ip cef inconsistency** command in user EXEC or privileged EXEC mode.

## clear ip cef inconsistency

**Syntax Description** This command has no arguments or keywords.

**Command Modes** User EXEC  
Privileged EXEC

Command History	Release	Modification
	12.0(15)S	This command was introduced.
	12.2(2)T	This command was integrated into Cisco IOS Release 12.2(2)T.

**Usage Guidelines** This command clears the CEF inconsistency checker statistics and records that accumulate when the **ip cef table consistency-check** command is enabled.

**Examples** The following example shows how to clear all CEF inconsistency checker statistics and records:

```
Router# clear ip cef inconsistency
```

Related Commands	Command	Description
	<a href="#">ip cef table consistency-check</a>	Enables CEF table consistency checker types and parameters.
	<a href="#">show ip cef inconsistency</a>	Displays CEF IP prefix inconsistencies.

# clear ip cef prefix-statistics

To clear Cisco Express Forwarding (CEF) counters by resetting the packet and byte count to zero (0), use the **clear ip cef prefix-statistics** command in user EXEC or privileged EXEC mode.

**clear ip cef** {*network* [*mask*] | \*} **prefix-statistics**

Syntax Description		
	<i>network</i>	Forwarding information base (FIB) entry specified by network.
	<i>mask</i>	(Optional) FIB entry specified by network and mask.
	*	Indicates all FIB entries.

Command Modes	
	User EXEC Privileged EXEC

Command History	Release	Modification
	11.2 GS	This command was introduced to support the Cisco 12012 Internet router.
	11.1 CC	Multiple platform support was added.

**Usage Guidelines** When the clear statistics flag is set, statistics are cleared as the FIB table is scanned. The time period is up to 60 seconds for all statistics to clear. However, clearing a specific prefix is completed immediately.

**Examples** The following example shows how to reset the packet and byte counts to zero for all CEF entries:

```
Router# clear ip cef * prefix-statistics
```

Related Commands	Command	Description
	<a href="#">ip cef accounting</a>	Enables CEF network accounting.
	<a href="#">show adjacency</a>	Displays CEF adjacency table information.
	<a href="#">show ip cef</a>	Displays entries or a summary of the FIB table.

# clear ip flow stats

To clear the NetFlow accounting statistics, use the **clear ip flow stats** command in privileged EXEC mode.

## clear ip flow stats

**Syntax Description** This command has no arguments or keywords.

**Command Modes** Privileged EXEC

Command History	Release	Modification
	11.1CA	This command was introduced.

**Usage Guidelines** You must have NetFlow accounting configured on your router before you can use this command. The **show ip cache flow** command displays the NetFlow accounting statistics. Use the **clear ip flow stats** command to clear the NetFlow accounting statistics.

**Examples** The following example shows how to clear the NetFlow accounting statistics on the router:

```
Router# clear ip flow stats
```

Related Commands	Command	Description
	<b>show ip cache flow</b>	Displays a summary of the NetFlow accounting statistics.
	<b>show ip cache verbose flow</b>	Displays a detailed summary of the NetFlow accounting statistics.
	<b>show ip flow interface</b>	Displays NetFlow accounting configuration on interfaces.
	<b>show ip interface</b>	Displays the usability status of interfaces configured for IP.

# clear ip mds

To clear multicast distributed switching (MDS) information from the router, use the **clear ip mds** command in privileged EXEC mode.

```
clear ip mds {all | [vrf vrf-name] forwarding}
```

Syntax Description	all	(Optional) Clear all IP MDS information.
	<b>vrf</b>	(Optional) A Virtual Private Network (VPN) routing and forwarding (VRF) instance.
	<i>vrf-name</i>	(Optional) Name assigned to the VRF.
	<b>forwarding</b>	(Optional) Clears all linecard routes from a Multicast Forwarding Information Base (MFIB) table and resynchronizes it with the Route Processor (RP).

**Command Modes** Privileged EXEC

Command History	Release	Modification
	11.2(11)GS	This command was introduced.

**Usage Guidelines** Cisco 12000 Series Internet Router

On a Cisco 12000 Series Internet Router the **clear ip mds** command must be run in privileged EXEC mode on a linecard.

**Examples** The following example clears all line card routes in an MFIB table on a Cisco 12000 Series Internet Router:

```
Router# attach 1
LC-Slot1> enable
LC-Slot1# clear ip mds forwarding
```

The following example clears all line card routes in an MFIB table on a Cisco 7500 Series Router:

```
Router# clear ip mds forwarding
```

Related Commands	Command	Description
	<b>show ip mds interface</b>	Displays the MFIB table and forwarding information for MDS on a line card.
	<b>show ip mds stats</b>	Display switching statistics or line card statistics for MDS.
	<b>show ip mds summary</b>	Displays a summary of the MFIB table for MDS.
	<b>show ip mds forwarding</b>	Displays MDS information for all the interfaces on the line card.

## clear ip mds forwarding

The **forwarding** keyword for the **clear ip mds** command is no longer documented as a separate command.

The information for using the **forwarding** keyword for the **clear ip mds** command has been incorporated into the **clear ip mds** command documentation. See the **clear ip mds** command documentation for more information.

# clear ip pim interface count

To clear all line card counts or packet counts, use the **clear ip pim interface count** command in user EXEC or privileged EXEC mode.

## **clear ip pim interface count**

**Syntax Description** This command has no arguments or keywords.

**Command Modes** User EXEC  
Privileged EXEC

Command History	Release	Modification
	11.2(11)GS	This command was introduced.

**Usage Guidelines** Use this command on a Router Processor (RP) to delete all multicast distributed switching (MDS) statistics for the entire router.

**Examples** The following example shows how to clear all the line card packets counts:

```
Router# clear ip pim interface count
```

Related Commands	Command	Description
	<b>clear ip mds forwarding</b>	Clears all routes from the MFIB table of a line card and resynchronizes it with the RP.

# clear ip route vrf

To remove routes from the Virtual Private Network (VPN) routing/forwarding instance (VRF) routing table, use the **clear ip route vrf** command in user EXEC or privileged EXEC mode.

```
clear ip route vrf vrf-name [* | network [mask]]
```

## Syntax Description

<i>vrf-name</i>	Name of the VRF for the static route.
*	Indicates all routes for a given VRF.
<i>network</i>	Destination to be removed, in dotted decimal format.
<i>mask</i>	(Optional) Mask for the specified network destination, in dotted decimal format.

## Command Modes

User EXEC  
Privileged EXEC

## Command History

Release	Modification
12.0(5)T	This command was introduced.

## Usage Guidelines

Use this command to clear routes from the routing table. Use the asterisk (\*) to delete all routes from the forwarding table for a specified VRF, or enter the address and mask of a particular network to delete the route to that network.

## Examples

The following command shows how to remove the route to the network 10.13.0.0 in the vpn1 routing table:

```
Router# clear ip route vrf vpn1 10.13.0.0
```

## Related Commands

Command	Description
<b>show ip route vrf</b>	Displays the IP routing table associated with a VRF.

# clear lane le-arp

To clear the dynamic LAN Emulation Address Resolution Protocol (LE ARP) table or a single LE ARP entry of the LANE client configured on the specified subinterface or emulated LAN, use the **clear lane le-arp** command in user EXEC or privileged EXEC mode.

## Cisco 7500 Series

```
clear lane le-arp [interface slot/port [.subinterface-number] | name elan-name] [mac-address mac-address | route-desc segment segment-number bridge bridge-number]
```

## Cisco 4500 and 4700 Routers

```
clear lane le-arp [interface number [.subinterface-number] | name elan-name] [mac-address mac-address | route-desc segment segment-number bridge bridge-number]
```

Syntax Description		
<b>interface</b> <i>slot/port</i> [ <i>.subinterface-number</i> ]	(Optional) Interface or subinterface for the LAN emulation (LANE) client whose LE ARP table or entry is to be cleared for the Cisco 7500 series routers. The space between the <b>interface</b> keyword and the <i>slot</i> argument is optional.	
<b>interface</b> <i>number</i> [ <i>.subinterface-number</i> ]	(Optional) Interface or subinterface for the LANE client whose LE ARP table or entry is to be cleared for the Cisco 4500 or 4700 routers. The space between the <b>interface</b> keyword and the <i>number</i> argument is optional.	
<b>name</b> <i>elan-name</i>	(Optional) Name of the emulated LAN for the LANE client whose LE ARP table or entry is to be cleared. Maximum length is 32 characters.	
<b>mac-address</b> <i>mac-address</i>	(Optional) Keyword and MAC address of the LANE client.	
<b>route-desc segment</b> <i>segment-number</i>	(Optional) Keywords and LANE segment number. The segment number ranges from 1 to 4095.	
<b>bridge</b> <i>bridge-number</i>	(Optional) Keyword and bridge number that is contained in the route descriptor. The bridge number ranges from 1 to 15.	

Command Modes	
	User EXEC Privileged EXEC

Command History	Release	Modification
	11.0	This command was introduced.

Usage Guidelines	
	This command removes dynamic LE ARP table entries only. It does not remove static LE ARP table entries.

If you do not specify an interface or an emulated LAN, this command clears all the LE ARP tables of any LANE client in the router.

If you specify a major interface (not a subinterface), this command clears all the LE ARP tables of every LANE client on all the subinterfaces of that interface.

This command also removes the fast-cache entries built from the LE ARP entries.

---

## Examples

The following example shows how to clear all the LE ARP tables for all clients on the router:

```
Router# clear lane le-arp
```

The following example shows how to clear all the LE ARP tables for all LANE clients on all the subinterfaces of interface 1/0:

```
Router# clear lane le-arp interface 1/0
```

The following example shows how to clear the entry corresponding to MAC address 0800.aa00.0101 from the LE ARP table for the LANE client on the emulated LAN named red:

```
Router# clear lane le-arp name red 0800.aa00.0101
```

The following example shows how to clear all dynamic entries from the LE ARP table for the LANE client on the emulated LAN named red:

```
Router# clear lane le-arp name red
```

The following example shows how to clear the dynamic entry from the LE ARP table for the LANE client on segment number 1, bridge number 1 in the emulated LAN named red:

```
Router# clear lane le-arp name red route-desc segment 1 bridge 1
```



### Note

---

MAC addresses are written in the same dotted notation for the **clear lane le-arp** command as they are for the global IP **arp** command.

---

# clear lane server

To force a LAN emulation (LANE) server to drop a client and allow the LANE configuration server to assign the client to another emulated LAN (ELAN), use the **clear lane server** command in user EXEC or privileged EXEC mode.

## Cisco 7500 Series

```
clear lane server {interface slot/port [.subinterface-number] | name elan-name} [mac-address
mac-address | client-atm-address atm-address | lecid lane-client-id | route-desc segment
segment-number bridge bridge-number]
```

## Cisco 4500 and 4700 Routers

```
clear lane server {interface number [.subinterface-number] | name elan-name} [mac-address
mac-address | client-atm-address atm-address | lecid lecid | route-desc segment
segment-number bridge bridge-number]
```

Syntax Description		
<b>interface</b> <i>slot/port</i> [ <i>.subinterface-number</i> ]		Interface or subinterface where the LANE server is configured for the Cisco 7500 series. The space between the <b>interface</b> keyword and the <i>slot</i> argument is optional.
<b>interface</b> <i>number</i> [ <i>.subinterface-number</i> ]		Interface or subinterface where the LANE server is configured for the Cisco 4500 or 4700 routers. The space between the <b>interface</b> keyword and the <i>number</i> argument is optional.
<b>name</b> <i>elan-name</i>		Name of the emulated LAN on which the LANE server is configured. Maximum length is 32 characters.
<b>mac-address</b> <i>mac-address</i>		(Optional) Keyword and MAC address of the LANE client.
<b>client-atm-address</b> <i>atm-address</i>		(Optional) Keyword and ATM address of the LANE client.
<b>lecid</b> <i>lane-client-id</i>		(Optional) Keyword and ID of the LANE client. The LANE client ID is a value from 1 to 4096.
<b>route-desc segment</b> <i>segment-number</i>		(Optional) Keywords and LANE segment number. The segment number ranges from 1 to 4095.
<b>bridge</b> <i>bridge-number</i>		(Optional) Keyword and bridge number that is contained in the route descriptor. The bridge number ranges from 1 to 15.

Command Modes	
	User EXEC Privileged EXEC

Command History	Release	Modification
	11.0	This command was introduced.

**Usage Guidelines**

After changing the bindings on the configuration server, use this command on the LANE server to force the client to leave one emulated LAN. The LANE server will drop the Control Direct and Control Distribute virtual channel connections (VCCs) to the LANE client. The client will then ask the LANE configuration server for the location of the LANE server of the emulated LAN it should join.

If no LANE client is specified, all LANE clients attached to the LANE server are dropped.

**Examples**

The following example shows how to force all the LANE clients on the emulated LAN named red to be dropped. The next time they try to join, they will be forced to join a different emulated LAN.

```
Router# clear lane server name red
```

**Related Commands**

Command	Description
<b>client-atm-address name</b>	Adds a LANE client address entry to the configuration database of the configuration server.
<b>lane database</b>	Creates a named configuration database that can be associated with a configuration server.
<b>mac-address</b>	Sets the MAC layer address of the Cisco Token Ring.
<b>show lane server</b>	Displays global information for the LANE server configured on an interface, on any of its subinterfaces, on a specified subinterface, or on an ELAN.

# clear mac-address-table

To remove a specified address (or set of addresses) from the MAC address table, use the **clear mac-address-table** command in privileged EXEC mode.

Cisco 2600 Series, Cisco 3600 Series, and Cisco 3700 Series Routers

```
clear mac-address-table [dynamic | secure | static] [address mac-address] [interface type
slot/port]
```

Catalyst Switches

```
clear mac-address-table [dynamic | restricted static | permanent] [address mac-address]
[interface type module/port]
```

Syntax	Description
<b>dynamic</b>	(Optional) Clears only dynamic addresses.
<b>secure</b>	(Optional) Clears only secure addresses.
<b>static</b>	(Optional) Clears only static addresses.
<b>restricted static</b>	(Optional) Clears only restricted static addresses.
<b>permanent</b>	(Optional) Clears only permanent addresses.
<b>address</b>	(Optional) Clears only a specified address.
<i>mac-address</i>	(Optional) Target MAC address.
<b>interface</b>	Clears all addresses for an interface.
<i>type</i>	(Optional) Interface type: ethernet, fastethernet, fddi, atm, or port channel.
<i>slot</i>	(Optional) The module interface number. Valid entries equal the number of ports on the chassis.
<i>module</i>	(Optional) The module interface number: 0 for fixed 1 or A for module A 2 or B for module B
<i>port</i>	(Optional) <b>Cisco 2600 Series, Cisco 3600 Series, and Cisco 3700 Series Routers</b> Port interface number ranges based on type of Ethernet switch network module used: 0 to 15 for NM-16ESW 0 to 35 for NM-36ESW 0 to 1 for GigabitEthernet  <b>Catalyst Switches</b> Port interface number ranging from 1 to 28: 1 to 25 Ethernet (fixed) 26, 27 Fast Ethernet (fixed) Port channel

**Defaults**

**Cisco 2600 Series, Cisco 3600 Series, and Cisco 3700 Series Routers**

All MAC addresses on the router being configured are cleared.

**Catalyst Switches**

The dynamic addresses are cleared.

**Command Modes**

Privileged EXEC

**Command History**

Release	Modification
12.2(2)XT	This command was introduced on Cisco 2600 series, Cisco 3600 series, and Cisco 3700 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T on Cisco 2600 series, Cisco 3600 series, and Cisco 3700 series routers.
12.2(11)T	This command was integrated into Cisco IOS Release 12.2(11)T.

**Usage Guidelines**

**Cisco 2600 Series, Cisco 3600 Series, and Cisco 3700 Series Routers**

If the **clear mac-address-table** command is invoked with no options, all MAC addresses are removed. If you specify an address but do not specify an interface, the address is deleted from all interfaces. If you specify an interface but do not specify an address, all addresses on the specified interface are removed.

**Catalyst Switches**

If the **clear mac-address-table** command is invoked with no options, all dynamic addresses are removed. If you specify an address but do not specify an interface, the address is deleted from all interfaces. If you specify an interface but do not specify an address, all addresses on the specified interface are removed.

If a targeted address is not present in the MAC forwarding table, the following error message appears:

```
MAC address not found
```

**Examples**

**Cisco 2600 Series, Cisco 3600 Series, and Cisco 3700 Series Routers**

The following example shows how to clear all dynamic addresses in the MAC forwarding table:

```
Router# clear mac-address-table dynamic
```

The following example shows how to clear the static address 0040.C80A.2F07 on Ethernet port 1:

```
Router# clear mac-address-table static address 0040.C80A.2F07 interface ether 0/1
```

**Catalyst Switches**

The following example shows how to clear all dynamic addresses in the MAC forwarding table:

```
Router# clear mac-address-table
```

The following example shows the permanent address 0040.C80A.2F07 being cleared on Ethernet port 1:

```
Router# clear mac-address-table permanent address 0040.C80A.2F07 interface ether 0/1
```

### Related Commands

Cisco 2600 Series, Cisco 3600 Series, and Cisco 3700 Series Routers

Command	Description
<b>mac-address-table (aging-time)</b>	Configures the length of time the switch keeps dynamic MAC addresses in memory before discarding.
<b>mac-address-table (secure)</b>	Associates a secure static address with a particular switched port interface.
<b>mac-address-table (static)</b>	Associates a static unicast or multicast MAC address with a particular switched port interface.
<b>show (mac-address-table)</b>	Displays addresses in the MAC address table for a switched port or module.
<b>show (mac-address-table secure)</b>	Displays the addressing security configuration.

### Catalyst Switches

Command	Description
<b>mac-address-table (aging-time)</b>	Configures the length of time the switch keeps dynamic MAC addresses in memory before discarding.
<b>mac-address-table (permanent)</b>	Associates a permanent unicast or multicast MAC address with a particular switched port interface.
<b>mac-address-table (restricted static)</b>	Associates a restricted static address with a particular switched port interface.
<b>show (mac-address-table)</b>	Displays addresses in the MAC address table for a switched port or module.
<b>show (mac-address-table security)</b>	Displays the addressing security configuration.

# clear mpls traffic-eng auto-bw timers

To reinitialize the automatic bandwidth adjustment feature on a platform, use the **clear mpls traffic-eng auto-bw timers** command in user EXEC or privileged EXEC mode.

**clear mpls traffic-eng auto-bw timers**

**Syntax Description** This command has no arguments or keywords.

**Command Modes** User EXEC  
Privileged EXEC

Command History	Release	Modification
	Release 12.2(4)T	This command was introduced.

**Usage Guidelines** For each tunnel for which automatic bandwidth adjustment is enabled, the platform maintains information about sampled output rates and the time remaining until the next bandwidth adjustment. The **clear mpls traffic-eng auto-bw timers** command clears this information for all such tunnels. The effect is as if automatic bandwidth adjustment had just been enabled for the tunnels.

**Examples** The following example shows how to clear information about sampled output rates and the time remaining until the next bandwidth adjustment:

```
Router# clear mpls traffic-eng auto-bw timers

Clear mpls traffic engineering auto-bw timers [confirm]
```

Related Commands	Command	Description
	<b>mpls traffic-eng auto-bw timers</b>	Enables automatic bandwidth adjustment on a platform for tunnels configured for bandwidth adjustment.
	<b>tunnel mpls traffic-eng auto-bw</b>	Enables automatic bandwidth adjustment for a tunnel, specifies the frequency with which tunnel bandwidth can be automatically adjusted, and designates the allowable range of bandwidth adjustments.

# clear mpoa client cache

To clear the ingress and egress cache entries of one or all Multiprotocol over ATM (MPOA) Clients MPCs, use the **clear mpoa client cache** command in user EXEC or privileged EXEC mode.

```
clear mpoa client [name mpc-name] cache [ingress | egress] [ip-address ip-address]
```

Syntax Description	
<b>name</b> <i>mpc-name</i>	(Optional) Specifies the name of the MPC with the specified name.
<b>ingress</b>	(Optional) Clears ingress cache entries associated with the MPC.
<b>egress</b>	(Optional) Clears egress cache entries associated with the MPC.
<b>ip-address</b> <i>ip-address</i>	(Optional) Clears matching cache entries with the specified IP address.

## Defaults

The system defaults are:

- All MPC cache entries are cleared.
- Both caches are cleared.
- Entries matching only the specified destination IP address are cleared.

## Command Modes

User EXEC  
Privileged EXEC

## Command History

Release	Modification
11.3(3a)WA4(5)	This command was introduced.

## Examples

The following example shows how to clear the ingress and egress cache entries for the MPC named ip\_mpc:

```
Router# clear mpoa client name ip_mpc cache
```

## Related Commands

Command	Description
<b>show mpoa client cache</b>	Displays the ingress or egress cache entries matching the IP addresses for the MPCs.

# clear mpoa server cache

To clear the ingress and egress cache entries, use the **clear mpoa server cache** command in user EXEC or privileged EXEC mode.

```
clear mpoa server [name mps-name] cache [ingress | egress] [ip-address ip-address]
```

Syntax Description	
<b>name</b> <i>mps-name</i>	(Optional) Specifies the name of the Multiprotocol over ATM (MPOA) Server (MPS). If this keyword is omitted, this command will apply to all servers.
<b>ingress</b>	(Optional) Clears ingress cache entries associated with the MPS.
<b>egress</b>	(Optional) Clears egress cache entries associated with the MPS.
<b>ip-address</b> <i>ip-address</i>	(Optional) Clears matching cache entries with the specified IP address. If this keyword is omitted, this command will clear all entries.

Command Modes	
	User EXEC Privileged EXEC

Command History	Release	Modification
	11.3(3a)WA4(5)	This command was introduced.

**Examples** The following example shows how to clear all cache entries:

```
Router# clear mpoa server cache
```

Related Commands	Command	Description
	<b>show mpoa server cache</b>	Displays ingress and egress cache entries associated with the MPS.

# clear vlan

To delete an existing virtual LAN (VLAN) from a management domain, use the **clear vlan** command in privileged EXEC mode.

**clear vlan** *vlan*

Syntax Description	<i>vlan</i>	Number of the VLAN. Valid values are 2 to 1000.
--------------------	-------------	---

Command Modes	Privileged EXEC
---------------	-----------------

Command History	Release	Modification
	12.0	This command was introduced.

**Usage Guidelines** Follow these guidelines for deleting VLANs:

- When you delete an Ethernet VLAN in Virtual Terminal Protocol (VTP) server mode, the VLAN is removed from all switches in the same VTP domain.
- When you delete a VLAN in VTP transparent mode, the VLAN is deleted only on the current switch.
- To delete a Token Ring Bridge Relay Function (TRBRF) VLAN, you must either first reassign its child Token Ring Concentrator Relay Functions (TRCRFs) to another parent TRBRF or delete the child TRCRFs.



### Caution

When you clear a VLAN, all ports assigned to that VLAN become inactive. However, the VLAN port assignments are retained until you move the ports to another VLAN. If the cleared VLAN is reactivated, all ports still configured on that VLAN are also reactivated. A warning is displayed if you clear a VLAN that exists in the mapping table.

**Examples** The following example shows how to clear an existing VLAN (VLAN 4) from a management domain:

```
Router# clear vlan 4
This command will deactivate all ports on vlan 4
in the entire management domain
Do you want to continue(y/n) [n]? y
VLAN 4 deleted
```

Related Commands	Command	Description
	<b>set vlan</b>	Groups ports into a VLAN.
	<b>show vlans</b>	Displays VLAN subinterfaces.

# clear vlan mapping

To delete existing 802.1Q virtual LAN (VLAN) to Inter-Switch Link (ISL) VLAN-mapped pairs, use the **clear vlan mapping** command in privileged EXEC mode.

```
clear vlan mapping dot1q { Iq-vlan | all }
```

Syntax	Description
<b>dot1q</b>	Specifies the 802.1Q VLAN.
<i>Iq-vlan</i>	Number of the 802.1Q VLAN for which to remove the mapping.
<b>all</b>	Clears the mapping table of all entries.

**Command Modes** Privileged EXEC

Command History	Release	Modification
	12.0	This command was introduced.

## Examples

The following example shows how to clear an existing mapped 802.1Q VLAN (VLAN 1044) from the mapping table:

```
Router# clear vlan mapping dot1q 1044
Vlan Mapping 1044 Deleted.
```

The following example shows how to clear all mapped 802.1Q VLANs from the mapping table:

```
Router# clear vlan mapping dot1q all
All Vlan Mapping Deleted.
```

Related Commands	Command	Description
	<b>set vlan mapping</b>	Maps 802.1Q VLANs to ISL VLANs.
	<b>show vlan mapping</b>	Displays VLAN mapping table information.

# client-atm-address name

To add a LAN emulation (LANE) client address entry to the configuration server's configuration database, use the **client-atm-address name** command in database configuration mode. To remove a client address entry from the table, use the **no** form of this command.

**client-atm-address** *atm-address-template* **name** *elan-name*

**no client-atm-address** *atm-address-template*

Syntax Description		
	<i>atm-address-template</i>	Template that explicitly specifies an ATM address or a specific part of an ATM address and uses wildcard characters for other parts of the ATM address, making it easy and convenient to specify multiple addresses matching the explicitly specified part.  Wildcard characters can replace any nibble or group of nibbles in the prefix, the end-system identifier (ESI), or the selector fields of the ATM address.
	<b>name</b> <i>elan-name</i>	Name of the emulated LAN. Maximum length is 32 characters.

**Defaults** No address and no emulated LAN name are provided.

**Command Modes** Database configuration

Command History	Release	Modification
	11.0	This command was introduced.

**Usage Guidelines** The effect of this command is to bind any client whose address matches the specified template into the specified emulated LAN. When a client comes up, it consults the LANE configuration server, which responds with the ATM address of the LANE server for the emulated LAN. The client then initiates join procedures with the LANE server.

Before this command is used, the emulated LAN specified by the *elan-name* argument must have been created in the configuration server's database by use of the **name server-atm-address** command.

If an existing entry in the configuration server's database binds the LANE client ATM address to a different emulated LAN, the new command is rejected.

This command affects only the bindings in the named configuration server database. It has no effect on the LANE components themselves.

See the **lane database** command for information about creating the database, and the **name server-atm-address** command for information about binding the emulated LAN's name to the server's ATM address.

The **client-atm-address name** command is a subcommand of the global **lane database** command.

### ATM Addresses

A LANE ATM address has the same syntax as a network service access point (NSAP), but it is not a network-level address. It consists of the following:

- A 13-byte prefix that includes the following fields defined by the ATM Forum:
  - AFI (Authority and Format Identifier) field (1 byte), DCC (Data Country Code) or ICD (International Code Designator) field (2 bytes), DFI (Domain Specific Part Format Identifier) field (1 byte), Administrative Authority field (3 bytes), Reserved field (2 bytes), Routing Domain field (2 bytes), and the Area field (2 bytes)
- A 6-byte ESI
- A 1-byte selector field

### Address Templates

LANE ATM address templates can use two types of wildcards: an asterisk (\*) to match any single character (nibble), and an ellipsis (...) to match any number of leading, middle, or trailing characters. The values of the characters replaced by wildcards come from the automatically assigned ATM address.

In LANE, a *prefix template* explicitly matches the prefix but uses wildcards for the ESI and selector fields. An *ESI template* explicitly matches the ESI field but uses wildcards for the prefix and selector.

In our implementation of LANE, the prefix corresponds to the switch, the ESI corresponds to the ATM interface, and the selector field corresponds to the specific subinterface of the interface.

### Examples

The following example shows how to use an ESI template to specify the part of the ATM address corresponding to the interface. This example allows any client on any subinterface of the interface that corresponds to the displayed ESI value, no matter to which switch the router is connected, to join the emulated LAN named engineering:

```
ATM(lane-config-database)# client-atm-address ...0800.200C.1001.** name engineering
```

The following example shows how to use a prefix template to specify the part of the ATM address corresponding to the switch. This example allows any client on a subinterface of any interface connected to the switch that corresponds to the displayed prefix to join the emulated LAN named marketing:

```
ATM(lane-config-database)# client-atm-address 47.000014155551212f.00.00... name marketing
```

### Related Commands

Command	Description
<b>default-name</b>	Provides an ELAN name in the database of the configuration server for those client MAC addresses and client ATM addresses that do not have explicit ELAN name bindings.
<b>lane database</b>	Creates a named configuration database that can be associated with a configuration server.
<b>mac-address</b>	Sets the MAC layer address of the Cisco Token Ring.
<b>name</b>	Specifies or replaces the ATM address of the LANE server for the ELAN
<b>server-atm-address</b>	in the configuration database of the configuration server.

# default-name

To provide an emulated LAN name in the configuration server's database for those client MAC addresses and client ATM addresses that do not have explicit emulated LAN name bindings, use the **default-name** command in database configuration mode. To remove the default name, use the **no** form of this command.

**default-name** *elan-name*

**no default-name**

<b>Syntax Description</b>	<i>elan-name</i>	Default emulated LAN name for any LAN emulation (LANE) client MAC address or LANE client ATM address not explicitly bound to any emulated LAN name. Maximum length is 32 characters.
---------------------------	------------------	--

**Defaults** No name is provided.

**Command Modes** Database configuration

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	11.0	This command was introduced.

**Usage Guidelines** This command affects only the bindings in the configuration server's database. It has no effect on the LANE components themselves.

The named emulated LAN must already exist in the configuration server's database before this command is used. If the default name-to-emulated LAN name binding already exists, the new binding replaces it.

The **default-name** command is a subcommand of the global **lane database** global configuration command.

**Examples** The following example shows how to specify the emulated Token Ring LAN named man as the default emulated LAN. Because none of the emulated LANs are restricted, clients are assigned to whichever emulated LAN they request. Clients that do not request a particular emulated LAN will be assigned to the named man emulated LAN.

```
lane database example2
 name eng server-atm-address 39.000001415555121101020304.0800.200c.1001.02
 name eng local-seg-id 1000
 name man server-atm-address 39.000001415555121101020304.0800.200c.1001.01
 name man local-seg-id 2000
 name mkt server-atm-address 39.000001415555121101020304.0800.200c.4001.01
 name mkt local-seg-id 3000
 default-name man
```

■ default-name

Related Commands	Command	Description
	<b>client-atm-address name</b>	Adds a LANE client address entry to the configuration database of the configuration server.
	<b>lane database</b>	Creates a named configuration database that can be associated with a configuration server.
	<b>mac-address</b>	Sets the MAC layer address of the Cisco Token Ring.
	<b>name server-atm-address</b>	Specifies or replaces the ATM address of the LANE server for the ELAN in the configuration database of the configuration server.